Washington State Department of Fish and Wildlife

FY2003

Lyons Ferry Hatchery Complex
Annual Operation Report

October 1, 2002 thru September 30, 2003

Funded by Bonniville Power Administration

Administered by United States Fish & Wildlife Service

Operated by Washington State Department of Fish and Wildlife

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INTRODUCTION

Lyons Ferry Complex (LFC) is operated by Washington Department of Fish and Wildlife (WDFW). It is funded by Bonneville Power Administration through the Lower Snake River Compensation Program (LSRCP), which is administered by United States Fish & Wildlife Service. The LFC staff includes the Hatchery Complex Manager, 14 permanent Fish Hatchery Specialists, a Plant Mechanic and seasonal workers. A staff of 8-10 permanent and seasonal biologists and technicians conduct evaluations for each species produced at LFC.

The program was established as compensation for lost fish resources and fisheries resulting from construction and operation of hydroelectric projects in the Snake River. The LSRCP in Washington has programs for spring chinook, fall chinook, summer steelhead and resident trout. Both operational and evaluation costs are covered by the LSRCP. Lyons Ferry Complex presently rears fish for release into both Washington and Idaho waters. In addition, Lyons Ferry Hatchery provides significant numbers of fall chinook sub-yearling and yearling fish as well as eggs to Nez Perce Tribal facilities. Eyed fall chinook eggs are also provided to Idaho Power Company to assist them in meeting their mitigation obligation.

Fish production began at Lyons Ferry Hatchery in the spring of 1982 with Wallowa summer steelhead yearlings transferred into Lyons Ferry Hatchery from Tucannon Hatchery. These fish were held in North series raceways for several weeks and 27,940 were released on-site and 35,155 were released into the Grande Ronde River that spring. Phase I construction of trout facilities at the Lyons Ferry Hatchery site was completed in November 1983. Phase II construction of salmon facilities and steelhead acclimation facilities was completed in November 1984. Since inception, production has been directed toward meeting established Lower Snake River Compensation Plan (LSRCP) goals of returning 18,300 adult fall chinook, 1,152 adult Tucannon River spring chinook, 4,656 adult summer steelhead and providing 67,500 angler days of fishing opportunity from 84,000 pounds of rainbow trout (at 3 fish/lb).

FACILITIES

Lyons Ferry Complex includes Lyons Ferry Hatchery, Tucannon Hatchery, Cottonwood Acclimation Pond, Dayton Acclimation Pond, Curl Acclimation & Fishing Pond. Lyons Ferry Hatchery is located along the Snake River at river mile 59.1, directly below the confluence of the Palouse River in Franklin County, Washington. Tucannon Hatchery is located along the Tucannon River at river mile 36 in Columbia County, Washington. Dayton Acclimation Pond is located along the Touchet River at river mile 53 in Columbia County, Washington. Currently, there is an adult trapping facility on the Touchet River just upstream of the acclimation pond at river mile 53.3. Cottonwood Creek Acclimation pond is located along the Grande Ronde River at river mile 28.7 directly above the confluence with Cottonwood Creek in Asotin County, Washington. Currently, there is an adult trapping facility on Cottonwood Creek at river mile 0.25. Curl Acclimation Pond is located along the Tucannon River at river mile 41 in Columbia County, Washington.

The facilities at Lyons Ferry Hatchery include two incubation buildings with office space and feed storage. Plus adult fish trapping, holding and spawning facility. There are eight residences for staff on site to fulfill security and emergency response situations.

The Lyons Ferry Hatchery rearing facilities include twenty-eight raceways @ 10 ft x 100 ft x 2.8 ft (water depth), nineteen raceways @ 10 ft x 88.5 ft x 3.5 ft (water depth) , three rearing lakes ~ 590,000 cu ft of water each. The adult holding facilities include three 83 ft x 10 ft x 5 ft (water depth) adult raceways with housed spawning facilities incorporated over the center of these ponds; two 18 ft x 150 ft x 4.3 ft (water depth) and two 21 ft x 150 ft x 4.3 ft (water depth) adult salmon holding ponds that will be modified this year to accommodate sub-yearling rearing when not needed for adult holding in the spring of the year. In addition, eight 20 ft x 4 ft (water depth) fiberglass circular ponds and fifteen 4 ft x 1.6 ft (water depth) fiberglass circular ponds are used for a captive brood spring chinook program. These ponds were added in 1998. The incubation facilities include 112 full stacks (2 units of 8 trays each) of vertical incubators, 24 shallow eyeing/hatching troughs, 64 hatching troughs and four 3.75 ft x 27.5 ft x 2 ft (water depth) intermediate rearing troughs. Water is supplied to Lyons Ferry Hatchery from the Marmes pump station, which has emergency power backup generation. The Marmes pump (wells) facility has three 300 hp pumps, four 200 hp pumps and one 75 hp pump. The well water right for Lyons Ferry Hatchery is 53,200 gpm (118.5 cfs).

The Tucannon Hatchery is located 23 miles up the Tucannon River Road from highway 12, between the towns of Dayton and Pomeroy Washington. Fish production began in 1949 with Department of Game. In 1983, phase I design started to remodel the hatchery as established by the Lower Snake River Compensation Plan (LSRCP). In November 1984 phase II construction of the facility was completed.

The Tucannon Hatchery includes a combined incubation / office, back-up power generation, feed storage, shop, domestic water, and well / spring buildings. There are two residences for staff on site to fulfill security and emergency response situations.

Tucannon Hatchery is supplied with three different water sources. River water is fed from the Tucannon River. The intake is located one half mile upstream of the hatchery. This water travels down an open channel into Rainbow Lake. From the outlet of Rainbow Lake the water travels through an 18" above ground pipeline to the hatchery. Rainbow Lake functions as a reservoir to provide the hatchery with cooler water in the summer months and warmer water in the winter months. It also provides a pool of water to draw from when encountering adverse intake conditions, resulting in temporary loss of water flows. The water right for this source is 12 cfs. Well water is pumped from two separate sources, pumped up to an aeration tower, then gravity fed to the rearing units and the domestic pump house. The combined well water right is 2 cfs. Spring water is pumped from an underground collection site to an aerator and gravity fed to rearing units. The water right for this source is 5.3 cfs.

The rearing vessels at Tucannon Hatchery include forty concrete 1 ft x 15 ft shallow troughs with a maximum of 7.5 cu ft of rearing area each; six concrete 40 ft round ponds with a maximum of 2,660 cu ft of rearing area each; two concrete 100 ft x 80ft raceways with a maximum of 2,390 cu ft of rearing area each; one concrete 15 ft x136 ft raceway

with a maximum of 11,730 cu. ft; and one earthen rearing pond with a maximum of 318,920 cu ft.

Construction of the Dayton Acclimation pond was completed in October 1986. Dayton Acclimation Pond is asphalt lined and holds ~ 200,000 cu. ft. of water. The water right to this pond is 2,694 gpm (6 cfs) for the period Jan 1st – May 15th of each year. It is supplied with water from the Touchet River through a gravity water supply system with the intake and temporary adult trapping facility just upstream of the pond. The pond is located adjacent to the Dayton Evaluation Lab office and has a storage garage for equipment and feed. It also has a small trailer for use by staff which are on-site at all times while the pond is in operation. It is presently used for acclimation and release of Lyons Ferry summer steelhead into the Touchet River.

Construction of Cottonwood Creek Acclimation Pond was completed in February 1985. Cottonwood Acclimation Pond has a concrete bottom with gravel walls and holds ~357,000 cu ft of water. It has a water right of 2,694 gpm (6 cfs) for the period January 1st through July 1st. It is supplied with water from Cottonwood Creek through a gravity water supply system with the intake integrated into the adult trapping facility located ~ 0.25 miles above the pond. It also has a small trailer for use by staff that are on-site at all times while the pond is in operation. It is presently used for acclimation and release of Wallowa summer steelhead into the Grande Ronde River.

The construction of Curl Acclimation Pond was completed in February 1985. Curl Acclimation Pond is an earthen pond and holds ~ 784,000 cu ft of water. It has a water right of 2,694 gpm (6 cfs). It is supplied with water from the Tucannon River through a gravity water supply system. It is currently utilized for acclimation of spring chinook yearlings for release into the Tucannon River. Chinook acclimation in Curl Lake started in 1997. After the spring chinookare released, the pond is used for resident trout fishing.

SPRING CHINOOK

Two Tucannon spring chinook programs are currently in operation at LFC. Up to 100 adult chinook (50 hatchery: 50 wild) are trapped from the Tucannon River for brood stock as part of the LSRCP supplementation program. Adults are held at LFH to reduce pre-spawning mortality. All fish are spawned, producing approximately 165,000 green eggs which provide for the release of 132,000 yearling smolts with a maximum release of 150,000 yearling smolts. A captive brood program has been initiated to aid in the recovery of Tucannon spring chinook. Small distinct family groups have been selected from the supplementation program fish and are being held as part of the captive brood population. At full production the captive brood program is designed to annually produce 150 spawning females which will provide an estimated 294,000 eggs (150,000 smolt goal annually). Fish over and above the maximum release goals for either of these two programs may be released as parr. Adult out-plants may be utilized in the captive brood stock program to keep within egg-take goals but release of marked parr will be given priority if rearing space at LFH permits. The captive brood program is funded directly by BPA. Yearling program fish are reared into the fall at Lyons Ferry Hatchery. They are then marked and transferred to Tucannon Hatchery. They are reared at Tucannon Hatchery during the winter due to the high probability of Curl Lake and its river intake

freezing over. During early spring the yearling fish are transferred to Curl Lake for final acclimation and volitional release.

2001 Brood Year
The captive brood and mixed (hatchery x wild) yearlings were transferred from Tucannon Hatchery to Curl Lake Acclimation Pond in mid-February 2003. The fish were allowed to volitionally leave the pond starting April 1, 2003. During the last week of operation, the pond was lowered in increments and the remaining fish forced from the pond on April 21, 2003.

2002 Brood Year
The first takes of 2002 captive brood and hatchery x wild cross Tucannon spring chinook started feeding in December 2002. These yearling fish were reared in raceways at Lyons Ferry Hatchery and were marked starting in early September 2003. The captive brood and mixed (hatchery x wild) yearlings were transferred from Lyons Ferry Hatchery to Tucannon Hatchery on October 10, 2003. These fish will be transferred to Curl Lake Acclimation Pond in February 2004.

2003 Brood Year
The first 2003 brood Tucannon spring chinook adult arrived at the Rainbow Lake Trap in May 2003. The last spring chinook adult arrived in September 2003. Please see Adult Collection and Spawning Tables 8 & 9 for adult collection. Please see Adult Collection and Spawning Tables 36, 37, and 38 for adult spawning and Table 44 & 45 for egg take information.

SNAKE RIVER FALL CHINOOK

The LFH fall chinook program is presently below its LSRCP adult mitigation goal. LFH origin fall chinook that return to the hatchery are used for brood stock. Additionally, some LFH origin fall chinook captured at Lower Granite Dam are transported to LFH for spawning in accordance with an agreement under the Columbia River Fish Management Plan. Annual adjustments to the agreement are expected. The program has expanded to provide eggs, sub-yearlings and yearlings for Nez Perce Tribal facilities and eyed eggs to Idaho Power Company to allow them to fulfill their mitigation obligation. Assuming a fecundity of 3,500 eggs/female, ~1,400 females are needed to provide the 4.9 million eggs for the production programs.

Rearing density reductions occurred for the 2002 brood year sub-yearlings. The modification of the four adult salmon holding ponds allowed for the rearing of sub-yearling chinook at a Density Index of 0.1 or less. This helped to reduce or eliminate the occurance of Bacterial Gill Disease (BGD) that has been a continual problem recently with the expansion of the fall chinook program to provide sub-yearling and yearling fish to Nez Perce Tribal Acclimation facilities. Bird predation in the rearing lakes continues to be a serious problem. Netting lake 2 in the summer of 2003 eliminated the bird predation on the yearling fall Chinook. However, the birds tended to congregate on lakes 1 and 3 and feed on the yearling steelhead. It appears that covering the other two lake ponds with netting is needed

2001 Brood Year
During the period February 3, 2003 thru March 5, 2003 a total of 446,112 yearling brood 2001 Snake River fall chinook were transferred to Nez Perce Tribal Acclimation facilities. The Lyons Ferry Hatchery yearling program, totaling 518,436 fish, was released April 1 – 9, 2003. The LFH yearling program was reared in raceways until the fall when they were marked and transferred to Rearing Lake 2. They were released directly from Rearing Lake #2. See Table 17 for additional planting information.

2002 Brood Year
The first take of 2002 brood Snake River fall chinook started feeding in January 2003. Nez Perce Tribal Acclimation facilities received 1,720,146 sub-yearlings and Cherry Lane (NPT) received 231,334 sub-yearlings. The National Marine Fisheries Service received 69,387 sub-yearlings for research and 200,092 sub-yearlings were released from LFH. There was a direct plant of 100,019 sub-yearlings into Couse Creek. The yearling program fish were reared in raceways through the summer. The Nez Perce Tribal Acclimation yearlings and LFH yearlings were marked during the period September 30 thru October 31, 2003. The NPT fish will be kept in raceways until they are transferred to the NPT facilities in 2004. The yearlings to be released at LFH in the spring of 2004 will be released directly from rearing lake 2. See Plants and Transfers Table 18.

Bacterial Gill Disease was a very minor problem with this brood of fall chinook in the spring of 2003 compared to the past five years. Elimination of excessive raceway loadings by using the A-series ponds during the early rearing period helped contribute to these results. Densities were in the range of .011 or less. This protocol will be used in the future to see if the same results occur.

2003 Brood Year
Snake River Fall Chinook trapping started at Lower Granite Dam on September 12, 2003 and at Lyons Ferry Hatchery on September 4, 2003. See adult collection and spawning tables 31 and 32 for adult numbers during this reporting period. Spawning of this brood started on October 21, 2003 and will be documented in next years report.

SUMMER STEELHEAD

Lyons Ferry Complex currently uses three stocks of steelhead in the Snake River Basin, (LFH, Tucannon, and Wallowa) and two stocks in the Walla Walla Basin (Touchet and LFH). All of these stocks are collected from a variety of traps located throughout SE Washington.

The LFH stock are trapped on-station at LFH from volunteers that swim into the fish ladder. The LFH trap has typically been operated between July and November. The trapping protocol has been modified in 2002 to delay trapping until September. The Trapping of Wallowa stock occurs on Cottonwood Creek (small tributary to the Grande Ronde River). Cottonwood Creek supplies water to the Cottonwood Acclimation Pond, and large numbers of hatchery adults return every year to the creek. A small trapping structure was installed in the 1992 to capture returning adults for brood stock. Trapping of the Tucannon River Endemic Stock begins in September at a temporary weir/trap that

is set up annually in the lower Tucannon River (river mile 10.6). The trap is run intermittently until April, when high stream flows disable the trap. Brood stock collections take place over the entire trapping period. Trapping of Touchet River Endemic stock begins in February at the Dayton adult trap. The Dayton adult trap was constructed with minor modifications to the water intake structure for the Dayton Acclimation Pond. Brood stock trapping typically ends in May. Brood stock are generally collected in March and April, which represents the main return at the trap.

The National Marine Fisheries Service's 1999 Biological Opinion ruled that continued use of LFH and Wallowa steelhead stocks constituted jeopardy to listed steelhead populations in the Snake and Columbia Rivers. Concerns about within and out-of-basin straying, and swamping of natural populations by the hatchery stocks, led NMFS to propose the development of endemic bloodstocks where possible, and eventual elimination of non-endemic stocks. Following that ruling, WDFW and the co-managers were responsive to the BIOP by initiating endemic bloodstocks programs in the Tucannon and Touchet rivers, and have since followed with a decrease in production of the LFH and Wallowa stocks.

Prior to any of the endemic steelhead being collected for brood stock, WDFW and the co-managers decided that the endemic programs should be tested and evaluated for 5-years at a minimum production level (50,000 smolts annually), before abandoning the LFH or Wallowa stocks from the hatchery production, or increasing the production of endemic stocks. Each endemic brood stock program began with the 2000 BY, with the original goal to collected 16 pairs for spawning. Adjustments have been made to the brood stock collections because fecundity estimates, and in-hatchery survival were greater than expected. Adult returns from the first endemic release year will be in 2002/2003. Adult traps on the Tucannon and Touchet Rivers will be used to evaluate the returns and determine success of the program. Any production increases for the endemic programs will not occur before the 2005 BY.

LFH stock: During August and September, fish are adipose fin clipped and transferred to rearing lake 1 at LFH. Each of the three rearing lakes is ~ 2.1 surface acres. A release goal of 345,000 smolts is the program for the 2002 & 2003 brood year smolts. Following is the release goal for each release location in 2003 and 2004: 85,000 from the Dayton Acclimation Pond into the Touchet River, 100,000 direct release into the Tucannon River, 100,000 direct release into the Walla Walla River and 60,000 on-site release at LFH. During December each year, about 85,000 are transferred from the rearing lake 1 to four raceways for additional marking. In January, ~20,000 fish programmed for transfer to the Dayton Acclimation Pond received a coded wire tag (CWT), a left ventral fin clip (LV) and a unique freeze brand (FB) applied. The Tucannon mark group, ~20,000 receive CWT +LV+FB marks. The Lyons Ferry Hatchery release marked group ~20,000 fish receive CWT+LV+FB marks. The Walla Walla River mark group, ~20,000 fish receive a CWT+LV and no freeze brand.

In February of each year, Lyons Ferry summer steelhead are transferred to Dayton AP. These fish are acclimated on Touchet River water. The discharge outlet screens are removed on April 1st and the fish are volitional released through April 20$^{th.}$ After that

date, feeding is discontinued and the pond level slowly lowered until the pond is completely drained on April 30th

2002 Brood
There were 378,917 yearling 2002 brood Lyons Ferry summer steelhead released in the spring of 2003. See Plants and Transfers Table 21 for numbers and locations of release.

2003 Brood
There were 630,000 brood year 2003 Lyons Ferry summer steelhead eggs taken. Please see Adult Collection and Spawning Table 40 and egg take Table 45 for 2003 brood adult collection and spawned numbers. Excess fry, 13,482 at 30.5 fpp, were released into Blue Lake and Spring Lake on Sept. 16, 2003. See Table 22. The yearling fish were reared into August in the raceways and were then adipose fin clipped and transferred to rearing lake 1.

2004 Brood
Brood collection of 2004 brood Lyons Ferry summer steelhead started in September 2003. See Table 43 for adult collection numbers during this reporting period.

Wallowa stock: In August and September these fish are adipose fin clipped and transferred into rearing lake 3. In December, ~ 50,000 fish are removed from lake 3 and split between two raceways. During January, ~ 42,000 of these fish will receive a CWT + VI elastomer (red/left) tag. During February Wallowa stock fish are transferred to Cottonwood AP. Transfer dates can very due snow conditions. The discharge outlet screens are removed on April 1st and the fish are volitionally released through April 20th. After that date, feeding is discontinued and the pond level slowly lowered until the pond is completely drained on April 30th.

2002 Brood
There were 236,627 yearling 2003 brood Wallowa summer steelhead released into the Grande Ronde River in April of 2003. See Table 23.

2003 Brood
There were 325,000 eggs taken in April from brood year 2003 Wallowa summer steelhead adults. See Table 45 for more egg take information. These eggs were obtained from 65 females. This brood of fish was reared in raceways until it they were adipose fin clipped in August and September and moved into rearing lake 3.

Tucannon Stock:
All Tucannon River endemic stock steelhead are reared in standard raceways at LFH. These fish are CWT + VI tagged in January. In mid-February the fish are transferred to TFH and placed into the large acclimation raceway (formerly used for spring chinook holding/acclimation). They are then released at the Curl Lake site above the hatchery (river mile 40) during early April. PIT tags are inserted into VI tagged fish captured at the smolt trap to monitor out-migration, and for comparison of within-year variation of migration performance among release groups. They are also being compared to natural origin smolts captured in the smolt trap.

Brood 2002
On April 15, 2003 there were 43,688 yearlings at 5.3 fpp planted into the Tucannon above the Curl Lake intake. See table 5 for additional release information.

Brood 2003
There where 70,000 eggs obtained for this brood using 14 wild females and 18 wild males. The 2003 brood Tucannon Wild steelhead adults were captured at the Ducharme Trap (river mile 11.0) in the lower Tucannon River spawning use. See Table 42 for more adult collection and spawning information and Table 43 for additional egg information. See Tables 11 & 12 for rack counts of fish handled at the Rainbow Lake Trap.

Touchet Stock: All Touchet River Endemic stock are reared in standard raceways at LFH. These fish are all CWT+VI tagged in January. These fish were direct stream released in late April / early May into the upper basin above the WDFW trap on the Touchet River. PIT tags to monitor out-migration and for comparison of within-year variation of migration performance between release groups are inserted before the groups are released

Brood 2002
On April 21, 2003 a direct stream release of 31,440 yearlings at 4.9 fpp were released into the Touchet River at river mile 57.2. See Table 26 for more information on this release.

Brood 2003
There were 80,000 eggs obtained for this brood using 16 wild females and 15 wild males. These fish started feeding in shallow troughs, were transferred to intermediate troughs where they were reared into September when they were transferred to a raceway. They will be reared until release in a raceway and will be planted in May of 2004 into the Touchet River. See tables 41 and 45.

RESIDENT FISH

Rainbow trout are reared to fulfill the resident fishing opportunity mitigation under LSRCP. Eggs are obtained from WDFWs Spokane Hatchery and from Idaho's Hayspur Hatchery (Kamloops stock). The production goal is 237,500 yearlings and 150,000 sub-yearling Spokane rainbow, and 50,000 fingerling Kamloops (triploid) rainbow. This requires 500,000 eyed Spokane stock rainbow trout eggs and 70,000 triploid eyed Kamloops stock eggs which are provided by IDFG to meet part of the LSRCP mitigation requirement within Idaho. They prefer to use Kamloops for certain releases because of a survival advantage over the Spokane stock when released into the Clearwater and Salmon Rivers. A small State funded program at Tucannon Hatchery utilizes Spokane stock rainbow reared to1½ lbs each to provide a unique fishing opportunity in local lakes.

Resident brood year 2001 Spokane rainbows plants are listed on Table 1 for Tucannon Hatchery and Table 27 for Lyons Ferry Hatchery. The 2002 brood Spokane rainbow plants and transfers are listed on Table 2 for Tucannon Hatchery and Table 28 for Lyons Ferry Hatchery. The 2002 Kamloops rainbow transferred in is shown on Table 6.

Fish Feed

Tucannon Hatchery fed 49,085 lbs. of feed during this budget year. See Table 16. Lyons Ferry Hatchery fed 281,456 lbs of feed during this budget year. See Table 48.

Fish Health Section

Steven Roberts

Introduction

The following section is a summary of fish health activities for the Lyons Ferry Hatchery Complex for October 1, 2002 to September 30, 2003. Adult sampling for viral and bacterial pathogens and fish health inspections are discussed.

The major fish health problems at Lyons Ferry Hatchery were:

Bacterial gill disease (BGD) in fall chinook sub-yearlings.
Chronic bacterial kidney disease (BKD) in yearling fall and spring chinook
Bacterial coldwater disease in summer steelhead and rainbow trout

The major fish health problems at Tucannon Hatchery were:

Chronic bacterial kidney disease (BKD) in yearling spring chinook
Bacterial coldwater disease in rainbow trout

Future efforts will focus on the prevention or control the above fish health problems. Reducing early rearing densities will be the emphasized for prevention and control of

BGD. With BKD, a reduction of overall rearing density and the addition of a second erythromycin medicated feed treatment at the sub-yearling stage will be employed.

Lyons Ferry Hatchery

Lyons Ferry Fall Chinook

Adults - 2002 Spawning
At spawning, samples are collected for viral and BKD-ELISA testing. Only females fall chinook from the third, fourth and fifth spawning week were sampled for BKD-ELISA testing. IHN virus was detected (Table 1). No management action were initiated because of the positive virus finding.

BKD prevalence was moderate with 83.5% Below-Low females (Table 2). Progeny of Below- Low females were selected for the yearling programs. Progeny of all other females were utilized in the sub-yearling programs.

2001 Broodyear
Bacterial kidney disease was first diagnosed in October, 2002. The fish were treated with erythromycin medicated feed in the fall, 2002. Chronic BKD mortality continued in the 2001 broodyear fall chinook during the rearing cycle.

2002 Broodyear
Dropout syndrome was noted in one raceway of newly ponded fall chinook in February, 2003. The dropout syndrome was noted in the only raceway receiving Ewos micro starter feed. The problem was also noted at other WDFW hatcheries using the same feed. The feed was changed to Biodiet starter and the mortality declined.

Bacterial gill disease was observed in a number of raceways of sub-yearling 2002 broodyear fall chinook in April, 2003. The fish were successfully treated with potassium permanganate. The BGD outbreak was less severe in 2003 with only eight raceways requiring treatment.

Tucannon Spring Chinook

Adults - 2003 Spawning
At spawning, samples are collected for viral testing and BKD-ELISA testing. Infectious Hematopoietic Necrosis (IHN) virus was detected in the viral samples (Table 1). No management action were initiated because of the positive virus finding.

BKD-ELISA prevalence was low with 83.3% Below-Low and 11.1% Low (Table 2). No segregation or culling was employed with the progeny of 2003 spawning.

2002 Broodyear
The 2002 broodyear Tucannon spring chinook were healthy throughout the rearing cycle at Lyons Ferry Hatchery. The fish were transferred to Tucannon Hatchery in October, 2003.

Tucannon Spring Chinook - Captive Broodstock

Adults - 2003 Spawning

At spawning, samples are collected for viral testing and BKD-ELISA testing. IHN virus was detected in the viral samples (Table 1). No management action were initiated because of the positive virus finding.

No BKD-ELISA positive females were detected (Table 2). Therfore, no segregation or culling was employed with the progeny of 2003 spawning.

2002 Broodyear

The 2002 broodyear were healthy throughout the rearing cycle at Lyons Ferry Hatchery. The fish were transferred to Tucannnon Hatchery in October, 2003.

Lyons Ferry Summer Steelhead

Adults - 2003 Spawning

All female steelhead adults were sampled for viral pathogens at spawning. In 2003, IHNV was detected in 5.4% of the female spawners (Table 1). Eggs from the seven IHNV positive females were destroyed. .

2002 Broodyear

The fish were healthy throughout the reporting period and upon release.

2003 Broodyear

Bacterial coldwater disease was observed in the Lyons Ferry summer steelhead in May, 2003. The fish were successfully treated with florfenicol coated fish pills. After recovery from the BCWD outbreak, the fish were healthy throughout the reporting period.

Grande Ronde Summer Steelhead

Adults - 2003 spawning at Cottonwood Pond

All female steelhead adults were sampled for viral pathogens at spawning. IHN virus was detected in 20% of the female spawners (Table 1). Eggs from the 14 IHNV positive fish were destroyed.

2002 Broodyear

The fish were healthy throughout the reporting period and upon release.

2003 Broodyear

Bacterial coldwater disease was observed in the Grande Ronde summer steelhead in August, 2003. The fish were successfully treated with florfenicol coated fish pills. After recovery from the BCWD outbreak, the fish were healthy throughout the reporting period.

Tucannon River Summer Steelhead

Adults - 2003 Spawning
All female steelhead adults were sampled for viral pathogens at spawning. In 2003, no viral pathogens were detected (Table 1).

2002 Broodyear
The fish were healthy throughout the reporting period and upon release.

2003 Broodyear
The fish were healthy throughout the reporting

Touchet River Summer Steelhead

Adults - 2003 Spawning
All female steelhead adults were sampled for viral pathogens at spawning. In 2003, no viral pathogens were detected (Table 1).

2002 Broodyear
The fish were healthy throughout the reporting period and upon release.

2003 Broodyear
The fish were healthy throughout the reporting period.

Spokane Rainbow Trout

Spokane rainbow trout are received as eyed eggs from the Spokane Hatchery. The Spokane rainbow broodstock is annually sampled for viral agents and is certified free of viral pathogens.

2001 Broodyear
The fish were healthy throughout the reporting period and upon release.

2002 Broodyear
Bacterial coldwater disease was observed in the Spokane rainbow in April through June, 2003. The fish were successfully treated with florfenicol coated fish pills. The fish recovered and were healthy throughout the remaining reporting period.

Tucannon Hatchery

Tucannon Spring Chinook

2001 Broodyear
In general, the Tucannon spring chinook were healthy. However, low level BKD mortality continued throughout the rearing cycle. The fish were treated with erythromycin medicated feed in November, 2002.

Tucannon Spring Chinook - Captive Broodstock

2001 Broodyear
In general, the Tucannon spring chinook were healthy. However, low level BKD mortality continued throughout the rearing cycle. The fish were treated with erythromycin medicated feed in November, 2002.

Spokane Rainbow Trout

2001 Broodyear

Bacterial gill disease with external parasites Gyrodactylus sp was noted in October, 2002 in rainbow trout rearing in round pond #5. The fish were successfully treated with hydrogen peroxide. Bacterial gill disease was later noted in rainbow reared in the earthen rearing pond. The rearing pond fish were treated with potassium permanganate.

2002 Broodyear

Bacterial coldwater disease with steatitis was observed in rainbow fingerling in May, 2003. The fish were successfully treated with florfenicol coated fish pills. The fish recovered and were healthy throughout the remaining reporting period.

Ichthyophthiriasis was diagnosed in two round ponds of rainbow fingerling in September, 2003. The fish were successfully treated with formalin administered every other day for two weeks.

Hayspur Rainbow Trout

2002 Broodyear
The fish were healthy throughout the reporting period and upon release.

Tucannon Summer Steelhead

2002 Broodyear
The fish were healthy throughout the reporting period and upon release.

Significant Maintenance / Equipment Purchased

Tucannon Hatchery

Replace submersible pumps and motors on both wells one & two (this work was completed by the WDF&W engineering staff out of Olympia).

Move existing spawning cover over pond "A" next to the raceway to provide shelter for the fish pump and road grader (this work was completed by the WDF&W engineering staff out of Olympia.

Complete otter fence installation around the perimeter of the earthen rearing pond (this work was completed by the hatchery staff).

Replace 325 gallon captive air holding tank for the domestic water storage system (this work was performed by a local vendor).

Move the road grader from the Lyons Ferry hatchery to the Tucannon hatchery.

Purchased a Point Four oxygen monitoring system for the 1450 gallon fish transport tank truck.

Install a drainage collection box and burry four inch drain pipe at residence two (this work was completed by the hatchery staff).

Update spill containment system, due to the bulk fuel storage tanks, at the Tucannon hatchery (this work was performed by the USF&W Service Portland, OR Engineers).

Mike Sutterfield (FHS-3) moved off station to Clarkston, WA. David Clark (FHS –2) was transferred from the Lyons Ferry hatchery to reside and primarily work at the Tucannon hatchery.

A Sanitary Survey was completed on the domestic water system (this was performed by the Department of Ecology.

Lyons Ferry Hatchery

A Sanitary Survey was completed on the domestic water system (this was performed by the Department of Ecology).

David Clark (FHS –2) was transferred from the Lyons Ferry hatchery to reside and primarily work at the Tucannon hatchery.

Replaced outlet screens for south side ponds 1-28. This required 56 new aluminum screens manufactured by the Yakima Screen Shop.

Replaced outlet screens to collection channels below the 3 lakes.

Replaced 8 outlet screens for adult ponds with new aluminum manufactured by the Yakima Screen Shop.

Installed complete bird net structure over Lake 2. It proved to be very successful and will be done over Lakes 2 & 3 next year.

Installed a 36 inch valve in adult pond mainline and a 24 inch valve in the south side lower deck pipeline. This allows us to shutdown and isolated various components of the rearing facility.

Replaced 28 south side pond valves at time of pipeline shut down. The old ones were worn and would not shut off completely.

Purchased one additional electronic oxygen meter to be used when fish hauling.

Section One Tables

Tucannon Hatchery

Table 1. Brood Year 2001 Spokane rainbow trout plants and transfers.

PLANTS AND TRANSFERS — TUCANNON HATCHERY — Page 1 of 6

DATE	TRANSFERRED IN		TRANSFERRED OUT		PLANTED		SIZE	WATER	RIVER	MARKS
	NUMBER	POUNDS	NUMBER	POUNDS	NUMBER	POUNDS	FISH / POUND	LOCATION	MILE	
April 21, 2003					2,288	520	4.4	Rainbow Lake		
April 21, 2003					2,024	460	4.4	Spring Lake		
April 21, 2003					1,702	387	4.4	Blue Lake		
April 21, 2003					3,001	682	4.4	Watson Lake		
April 21, 2003					502	114	4.4	Beaver Lake		
April 21, 2003					1,007	229	4.4	Deer Lake		
April 21, 2003					436	99	4.4	Donnie Lake		
April 22, 2003					2,002	455	4.4	Jefferson Park Pond		
April 22, 2003					998	227	4.4	Lions Park Pond		
April 23, 2003					2,002	455	4.4	Fishhook Park Pond		
April 23, 2003					506	115	4.4	Casey Pond		
April 23, 2003					2,002	455	4.4	Pampa Pond		
April 24, 2003					2,001	435	4.6	Headgate Pond		
April 24, 2003					2,001	435	4.6	Gilcrest Pond		
April 25, 2003					3,588	780	4.6	Curl Lake		
April 25, 2003					501	109	4.6	Dayton Jv Pond		
April 28, 2003					2,000	465	4.3	Garfield Pond		
April 29, 2003					1,398	325	4.3	Curl Lake		
April 29, 2003					1,677	390	4.3	Rainbow Lake		
April 30, 2003					3,999	930	4.3	Quarry Pond		
April 30, 2003					1,660	386	4.3	Golf Course Pond		
April 30, 2003					2,442	568	4.3	West Evans Pond		
April 30, 2003					2,000	465	4.3	Silcott Pond		
Page 1 Total					41,737	9,486				
Sub Total					41,737	9,486				

Table 1. Brood Year 2001 Spokane rainbow trout plants and transfers.

PLANTS AND TRANSFERS TUCANNON HATCHERY

DATE	TRANSFERRED IN		TRANSFERRED OUT		PLANTED		SIZE	WATER	RIVER	MARKS
	NUMBER	POUNDS	NUMBER	POUNDS	NUMBER	POUNDS	FISH / POUND	LOCATION	MILE	
Page 1 Subtotal					41,737	9,486				
May 01, 2003					4,002	870	4.6	Dalton Lake		
May 5, 2003					731	170	4.3	Rainbow Lake		
May 14, 2003					2,000	465	4.3	Blue Lake		
May 15, 2003					2,964	780	3.8	Quarry Pond		
May 15, 2003					3,876	1,020	3.8	Curl Lake		
May 15, 2003					1,976	520	3.8	Spring Lake		
May 16, 2003					3,120	780	4	Bennington Lake		
May 16, 2003					752	188	4	Dayton Jv Pond		
May 17, 2003					1,022	269	3.8	Deer Lake		
May 19, 2003					3,978	1,020	3.9	West Evans Pond		
May 19, 2003					3,978	1,020	3.9	Golf Course Pond		
May 20, 2003					3,003	770	3.9	Watson Lake		
May 20, 2003					507	130	3.9	Beaver Lake		
May 21, 2003					753	193	3.9	Bakers Pond		
May 23, 2003					2,399	585	4.1	Rainbow Lake		
May 23, 2003					2,399	585	4.1	Blue Lake		
May 28, 2003					1,502	455	3.3	Union Flat Creek		
May 28, 2003					2,145	650	3.3	Curl Lake		
May 30, 2003					700	212	3.3	Lions Park Pond		
June 4, 2003					3,900	1,300	3	Bennington Lake		
Page 2 Total					45,707	11,982				
Sub Total					87,444	21,468				

Table 1. Brood Year 2001 Spokane rainbow trout plants and transfers.

PLANTS AND TRANSFERS TUCANNON HATCHERY

DATE	TRANSFERRED IN		TRANSFERRED OUT		PLANTED		SIZE	WATER	RIVER	MARKS
	NUMBER	POUNDS	NUMBER	POUNDS	NUMBER	POUNDS	FISH / POUND	LOCATION	MILE	
Page 2 Subtotal					87,444	21,468				
June 6, 2003					2,165	698	3.1	West Evans Pond		
June 6, 2003					1,762	568	3.1	Rainbow Lake		
June 11, 2003					2,500	1,000	2.5	Bennington Lake		
June 11, 2003					750	300	2.5	Bakers Pond		
June 12, 2003					1,047	455	2.3	Blue Lake		
June 16, 2003					1,050	500	2.1	Golf Course Pond		
June 18, 2003					429	195	2.2	Curl Lake		
June 30, 2003					160	80	2.0	Curl Lake		
July 3, 2003					300	150	2.0	Lions Park Pond		
Page 3 Total					10,163	3,946				
Sub Total					97,607	25,414				

Table 1. Brood Year 2001 Spokane rainbow trout eyed egg plants and transfers.

PLANTS AND TRANSFERS — TUCANNON HATCHERY — Page 4 of 6

DATE	TRANSFERRED IN		TRANSFERRED OUT		PLANTED		SIZE	WATER	RIVER	MARKS
	NUMBER	POUNDS	NUMBER	POUNDS	NUMBER	POUNDS	FISH / POUND	LOCATION	MILE	
Page 3 Subtotal					97,607	25,414				
January 13, 2003	200,158						238/oz			
January 14, 2003			238				238/oz	Asotin High School		
			238				238/oz	Asotin Elementary		
			238				238/oz	Clarkston High School		
			238				238/oz	Clarkston Elementary		
January 17, 2003			238				238/oz	Pomeroy Elementary		
Page 4 Total	200,158		1,190		0	0				
Sub Total	200,158		1,190		97,607	25,414				

Table 1. Brood Year 2001 Spokane rainbow (state) trout plants and transfers.

PLANTS AND TRANSFERS TUCANNON HATCHERY

DATE	TRANSFERRED IN		TRANSFERRED OUT		PLANTED		SIZE	WATER	RIVER	MARKS
	NUMBER	POUNDS	NUMBER	POUNDS	NUMBER	POUNDS	FISH / POUND	LOCATION	MILE	
February 24, 2003					101	172	0.59	Blue Lake		Jumbos
February 24, 2003					100	170	0.59	Watson Lake		Jumbos
February 24, 2003					100	170	0.59	Rainbow Lake		Jumbos
February 24, 2003					100	170	0.59	Spring Lake		Jumbos
February 25, 2003					150	211	0.71	West evans pond		Jumbos
February 25, 2003					150	211	0.71	Golf course pond		Jumbos
February 26, 2003					300	447	0.67	Big Four Lake		Jumbos
March 13, 2003					100	176	0.57	Blue Lake		Jumbos
March 13, 2003					100	176	0.57	Spring Lake		Jumbos
March 13, 2003					100	176	0.57	Golf course pond		Jumbos
March 14, 2003					100	176	0.57	West evans pond		Jumbos
March 26, 2003					100	202	0.5	Watson Lake		Jumbos
March 26, 2003					100	202	0.5	Rainbow Lake		Jumbos
March 28, 2003					50	101	0.5	Dayton Jv pond		Jumbos
April 2, 2003					150	303	0.5	Golf course pond		Jumbos
April 2, 2003					150	315	0.48	West evans pond		Jumbos
April 2, 2003					100	210	0.48	Blue Lake		Jumbos
April 2, 2003					100	210	0.48	Spring Lake		Jumbos
April 7, 2003					300	612	0.49	Dalton Lake		Jumbos
April 7, 2003					300	612	0.49	Quarry pond		Jumbos
Page 5 Total					2,751	5,022				
Sub Total					2,751	5,022				

Table 1. Brood Year 2001 Spokane rainbow (state) trout plants and transfers.

PLANTS AND TRANSFERS. TUCANNON HATCHERY

DATE	TRANSFERRED IN		TRANSFERRED OUT		PLANTED		SIZE	WATER	RIVER	MARKS
	NUMBER	POUNDS	NUMBER	POUNDS	NUMBER	POUNDS	FISH / POUND	LOCATION	MILE	
Page 5 Subtotal					2,751	5,022				
April 8, 2003					200	408	0.49	Pampa pond		Jumbos
April 15, 2003					100	213	0.47	Rainbow Lake		Jumbos
April 15, 2003					100	213	0.47	Watson Lake		Jumbos
April 22, 2003					100	213	0.47	Jefferson Park pond		Jumbos
April 22, 2003					100	213	0.47	Lions Park pond		Jumbos
April 23, 2003					60	118	0.51	Fishhook Park pond		Jumbos
April 25, 2003					100	197	0.51	Curl Lake		Jumbos
April 25, 2003					25	49.25	0.51	Dayton Jv pond		Jumbos
May 14, 2003					72	158	0.45	Curl Lake		Jumbos
November 7, 2002					300	136	2.2	Donnie Lake		Jumbos
Page 6 Total					1,157	1,918				
Total					3,908	6,940				

Table 2. Brood Year 2002 Spokane rainbow trout plants and transfers (state and federal).

PLANTS AND TRANSFERS

TUCANNON HATCHERY

DATE	TRANSFERRED IN		TRANSFERRED OUT		PLANTED		SIZE	WATER	RIVER	MARKS
	NUMBER	POUNDS	NUMBER	POUNDS	NUMBER	POUNDS	FISH / POUND	LOCATION	MILE	
Federal										
May 12, 2003					7,700	28	275	Spring lake		
May 12, 2003					7,315	27	275	Blue lake		
State										
May 12, 2003					1,050	6	175	Spring Lake		
July 2, 2003			935	38						
September 2, 2003					210	42	5	Donnie Lake		
			935	38	16,275	103				

Table 3. Brood Year 2001 Tucannon spring chinook - Mixed Origin - plants and transfers.

PLANTS AND TRANSFERS

TUCANNON HATCHERY

DATE	TRANSFERRED IN		TRANSFERRED OUT		PLANTED		SIZE	WATER	RIVER	MARKS
	NUMBER	POUNDS	NUMBER	POUNDS	NUMBER	POUNDS	FISH / POUND	LOCATION	MILE	
October 10, 2002	148,759	4,753					31.3			VI-Right Red Elast.
February 24, 2003	1,449	97					15	Curl lake		No Marks
April 1-21 2003					146,922	11,389	12.9	Tucannon river	40	VI-Right Red
	150,208	4,850			146,922	11,389				

Table 4. Brood Year 2001 Tucannon spring chinook - Captive Brood - plants and transfers.

PLANTS AND TRANSFERS — TUCANNON HATCHERY

DATE	TRANSFERRED IN		TRANSFERRED OUT		PLANTED		SIZE	WATER	RIVER	MARKS
	NUMBER	POUNDS	NUMBER	POUNDS	NUMBER	POUNDS	FISH / POUND	LOCATION	MILE	
October 10, 2002	144,412	4,223					34.2			Agency Wire
April 1-21 2003					140,396	10,100	13.9	Curl lake		Agency Wire
	144,412	4,223			140,396	10,100				

Table 5. Brood Year 2002 Tucannon summer steelhead - Hatchery - plants and transfers.

PLANTS AND TRANSFERS — TUCANNON HATCHERY

DATE	TRANSFERRED IN		TRANSFERRED OUT		PLANTED		SIZE	WATER	RIVER	MARKS
	NUMBER	POUNDS	NUMBER	POUNDS	NUMBER	POUNDS	FISH / POUND	LOCATION	MILE	
March 5, 2003	43,871	7,092					6.2			VI-Right green
April 15-16 2003					43,688	8,243	5.3	Tucannon River	40	VI-Right green
	43,871	7,092	0	0	43,688	8,243				

Table 6. Brood Year 2002 Kamloop triploid rainbow trout plants and transfers.

PLANTS AND TRANSFERS — TUCANNON HATCHERY

DATE	TRANSFERRED IN		TRANSFERRED OUT		PLANTED		SIZE	WATER	RIVER	MARKS
	NUMBER	POUNDS	NUMBER	POUNDS	NUMBER	POUNDS	FISH / POUND	LOCATION	MILE	
February 5, 2003	52,800						318/oz			triploids
February 12, 2003	8,500						216/oz			triploids
February 20, 2003	11,000						333/oz			triploids
February 27, 2003	10,584						251/oz			triploids
July 24, 2003			23,858	302			79/lb	Lyons Ferry Hatchery		
July 28, 2003			24,220	346			70/lb	Lyons Ferry Hatchery		
			48,078	648						

Table 7. Plants and Transfers summary for the period Oct 1, 2002 - Sep 30, 2003.

PLANTS AND TRANSFERS SUMMARY

Oct 1, 2002 - Sep 30, 2003

TUCANNON HATCHERY

STOCK CODE	TRANSFERRED IN		TRANSFERRED OUT		PLANTED		AVERAGE SIZE
	NUMBER	POUNDS	NUMBER	POUNDS	NUMBER	POUNDS	FISH / POUND
CK:SP:TUCA:01:M	150,208	4,799					
CK:SP:TUCA:01:M					146,922	11,389	31.300
							12.900
CK:SP:TUCA:01:CB	144,412	4,223					
CK:SP:TUCA:01:CB					140,396	10,100	34.200
							13.900
SH:SU:TUCA:02:W	43,871	7,076					
SH:SU:TUCA:02:W					43,688	8,243	6.200
							5.300
RB:NA:SPOK:01:H(fed)					97,607	29,578	3.300
RB:NA:SPOK:01:H(state)					3,908	6,979	0.560
RB:NA:SPOK:02:H(fed)	192,066		2,125	38	15,015	55	273.000
RB:NA:SPOK:02:H(state)	8,092				1,260	48	26.250
RB:NA:KAML:02:H	82,884		48,078	645			74.500
	621,533	16,098	50,203	683	448,796	66,392	

Table 8. Brood Year 2003 Tucannon River spring chinook - Hatchery - collection and spawning.

ADULT COLLECTION AND SPAWNING — TUCANNON HATCHERY

Adult Collection Site: Rainbow Lake Trap

MONTH ENDING	EST. TRAPPED / RECEIVED			RETURNED TO RIVER			SHIPPED TO LFH			MORTALITY			SPAWNED				DISPOSAL			REMARKS
	ADULTS	JACKS		Male	Female	Jx	Male	Female	Jx	Male	Female	Jx	Male	Female	NVF	Jx	Male	Female	Jx	
		MAXI	MINI																	
May-03	72			31	30		5	6												
Jun-03	44	28		19	11	23	7	7	5											
Jul-03	2						2													
Aug-03	0						0	0												
Sep-03	4	1		1		1	1	2												
Adjustments																				
SEASON TOTAL	122	29	0	51	41	24	15	15	5	0	0	0	0	0	0	0	0	0	0	

Note: Adjustments are fish that were identified at trapping as wild but were found to be hatchery by scale analysis.

Table 9. Brood Year 2003 Tucannon River spring chinook - Wild - collection and spawning.

ADULT COLLECTION AND SPAWNING — TUCANNON HARRY HATCHERY

Adult Collection Site: Rainbow Lake Trap

MONTH ENDING	EST. TRAPPED / RECEIVED			RETURNED TO RIVER			SHIPPED TO LFH			MORTALITY			SPAWNED				DISPOSAL			REMARKS
	ADULTS	JACKS		Male	Female	Jx	Male	Female	Jx	Male	Female	Jx	Male	Female	NVF	Jx	Male	Female	Jx	
		MAXI	MINI																	
May-03	32			17	9		4	2												
Jun-03	18	4		4	3	4	6	5												
Jul-03	6						5	1												
Aug-03	2						2													
Sep-03	19	2		1	2	2	10	6												
Adjustments																				
SEASON TOTAL	77	6	0	22	14	6	27	14	0	0	0	0	0	0	0	0	0	0	0	

Note: One male, one female and one jack that were originally counted as wild were identified as hatchery fish and reflected as adjustments. In addition, one fish was originally listed as a male under the shipped column was actually a jack. This is also noted under adjustments.

Table 10. Brood Year 2003 Tucannon River bull trout handling at Rainbow Lake Trap.

ADULT COLLECTION AND SPAWNING

TUCANNON HATCHERY

Adult Collection Site: Rainbow Lake Trap

MONTH ENDING	EST. TRAPPED / RECEIVED			RETURNED TO RIVER						MORTALITY			SPAWNED				DISPOSAL			REMARKS
	ADULTS	JACKS		Above Barrier			Below Barrier			Male	Female	Jx	Male	Female	NVF	Jx	Male	Female	Jx	
		MAXI	MINI	Male	Female	Adult	Male	Female	Jx											
Mar-03	3					3														
Apr-03	1					1														
May-03	90					90														
Jun-03	132					132														
Jul-03	35					35														
Aug-03																				
Sep-03																				
SEASON TOTAL	261	0	0	0	0	261	0	0	0	0	0	0	0	0	0	0	0	0	0	

Table 11. Brood Year 2003 Tucannon summer steelhead - Wild - collection and spawning.

ADULT COLLECTION AND SPAWNING

TUCANNON HATCHERY

Adult Collection Site: Rainbow Lake Trap

MONTH ENDING	EST. TRAPPED / RECEIVED			RETURNED TO RIVER						MORTALITY			SPAWNED				DISPOSAL			REMARKS
	ADULTS	JACKS		BELOW RACK			ABOVE RACK													
		MAXI	MINI	Male	Female	Jx	Male	Female	Jx	Male	Female	Jx	Male	Female	NVF	Jx	Male	Female	Jx	
Jan-03	1							1												
Feb-03	5						3	2												
Mar-03	37						18	19												
Apr-03	20						9	11												
SEASON TOTAL	63	0	0	0	0	0	30	33	0	0	0	0	0	0	0	0	0	0	0	

Table 12. Brood Year 2003 Tucannon summer steelhead - Hatchery - collection and spawning.

ADULT COLLECTION AND SPAWNING

TUCANNON HATCHERY

Adult Collection Site: Rainbow Lake Trap

MONTH ENDING	EST. TRAPPED / RECEIVED			RETURNED TO RIVER						MORTALITY			SPAWNED				DISPOSAL			REMARKS
	ADULTS	JACKS		BELOW RACK			ABOVE RACK													
		MAXI	MINI	Male	Female	Jx	Male	Female	Jx	Male	Female	Jx	Male	Female	NVF	Jx	Male	Female	Jx	
Apr-03	5			1	4															
May-03	1				1															
SEASON TOTAL	6	0	0	1	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Table 14. Diseases and treatments - Juveniles.

DISEASES AND TREATMENTS

TUCANNON HATCHERY

Oct. 1, 2002 - Sep. 30, 2003

Date Exam	Stock Brood Year	Pond Number	Disease	Chemical Dosage	Treatment Method / Time	H2O Temp.	Remarks
10/08/02	RB state 01	POND 3	GILL	Hydrogen Peroxide	50ppm/Bath/30 min	56/50	fish did fine
10/09/02	RB state 01	POND 5 & 6	GILL	Hydrogen Peroxide	50ppm/Bath/30min	56/50	fish did fine
10/11/02	Sgchinook01/supp	1,2,4,E,W	BKD	Erythromycin	Fed 4.5%/32days	49/39	had to feed longer because of colder water.
10/25/02	RB 01	Rearing pond	Gill	Kmno4/1ppm	Drip/12hrs	48/42	mortality went down
11/15/02	RB 01	Rearing pond	Gill	Kmno4/1ppm	Drip/12hrs	42/40	mortality went down
05/27/03	RB 02	2 & 4	cold water	florifenicol 15mg/kg	fed 7.2ml nuflor l lb of pills	55/50	mortality went down fed 10 days
05/30/03	RB 02	5	cold water	florifenicol 15mg/kg	fed 4 ml nuflor 1 lb of pills 10 day treatments	55/50	mortality went down fed 10 days
07/09/03	Kaml 03	3	cold water	florifenicol 15mg/kg	fed 11ml nuflor 3.5 lbs of pills.	60/55	mortality went down fed 10 days
09/10/03	RB 02 state	6	ICH	formalin @167ppm	drip method for 1hr.	60/57	this is a 2wk treatment
				101 ml / minute	every other day		
09/18/03	RB 02	1,2,3,4,5	ICH	formalin @167ppm 101 ml / minute	drip method for 1 hr. every other day	60/57	this is a 2wk treatment
09/19/03	RB 02	east / west rw	ICH	formalin @167ppm	drip method for 1 hr.	60/57	this is a 2wk treatment
				126 ml/minute	every other day		

Table 15. Diseases and treatments - Adults.

DISEASES AND TREATMENTS

TUCANNON HATCHERY

Oct. 1, 2002 - Sep. 30, 2003

Date Exam	Stock Brood Year	Pond Number	Disease	Chemical Dosage	Treatment Method / Time	H2O Temp.	Remarks
	2003 Spring Chinook		BKD				Prophylactic Treatment

Table 16. Feed Fed during the period Oct 1, 2002 - Sep 30, 2003.

TUCANNON HATCHERY

Oct 1, 2002 through Sep 30, 2003

FEED TYPE / SIZE	CY 2002 Oct-02	Nov-02	Dec-02	CY 2003 Jan-03	Feb-03	Mar-03	Apr-03	May-03	Jun-03	Jul-03	Aug-03	Sep-03	Total
BioProducts													
BMF 2.5 mm	875	1,150	1,625	2,100	1,025	730							7,505
BMF2.5MM + Aqua @ 4.5%	924	396											1,320
Fish Pills #2													0
Totals	1,799	1,546	1,625	2,100	1,025	730	0	0	0	0	0	0	8,825
MooreClark													
Nutra 2.5 mm Clarks Fry						1,892	2,112						4,004
Fry 2.0 mm AB	308	1,540	1,848	704									4,400
Fry 2.5 mm AB				792	2,464	4,664	880						8,800
Fry 3.5 mm	132	308											440
4.0mm AB		660	814										1,474
Totals	440	2,508	2,662	1,496	2,464	6,556	2,992	0	0	0	0	0	19,118
Nelson & Sons Inc.													
Ext Sal 3.0 mm	150												150
Totals	150	0	0	0	0	0	0	0	0	0	0	0	150
Rangens													
Starter #0					6	49	35	10					100
Starter #1							50	50					100
Starter #2								50	250	250			550
Grower #3	50												50
Grower #4	2,650	350											3,000
Trout 3/32"	250	50		50									350
Trout 1/16										500	600	1,350	2,450
Trout 3/16" Red #1			350	1,250	700	700							3,000
Trout 1/4" Red #1						600	300						900
Totals	2,950	400	350	1,300	706	1,349	385	110	250	750	600	1,350	10,500
Ewos													
# 1 Starter					7	42	138	313					500
# 2 Starter								88	396	44			528
1.2mm Starter								20	24	24			68
1.5 transfer								44					44
2.0 pacific						968	2,728		88	88			3,872
3.0 pacific							308	4,268	44				4,620
3.0 vita									264	44	200	352	860
Totals	0	0	0	0	7	1,010	3,174	4,733	816	200	200	352	10,492
Total	5,339	4,454	4,637	4,896	4,195	8,635	3,377	110	250	750	600	1,350	49,085

Section Two Tables

Lyons Ferry Hatchery

Table 17. Brood Year 2001 Snake River fall chinook - Hatchery - plants and transfers.

PLANTS AND TRANSFERS LYONS FERRY HATCHERY

DATE	TRANSFERRED IN		TRANSFERRED OUT		PLANTED		SIZE	WATER	RIVER	MARKS
	NUMBER	POUNDS	NUMBER	POUNDS	NUMBER	POUNDS	FISH / POUND	LOCATION	MILE	
Oct. 16, 2002					29059	1181	24.6	Snake River	130.7	None
Dec. 2, 2002					24573	946	26	Snake River	138	None
Feb. 3-4, 2003			152,604	11,304			13.5	Capt. John's Rapids AP - NPT		AD/VI Left Blue/CWT 61-01/18
March 3, 2003			143,492	11,958			12	Pittsburg Landing AP - NPT		AD/VI Right Green/CWT 61-01/20
March 5, 2003			150,016	12,636			11.9	Big Canyon AP - NPT		AD/VI Left Green/CWT 61-01/19
April 1-9, 2003					518,436	53,392	9.71	On-site Release	59.1	AD/VI Left Red/CWT 63-15/85
			446,112	35,898	572,068	55,519				

Table 18. Brood Year 2002 Snake River fall chinook - Hatchery - plants and transfers.

PLANTS AND TRANSFERS

LYONS FERRY HATCHERY

DATE	TRANSFERRED IN		TRANSFERRED OUT		PLANTED		SIZE	WATER	RIVER	MARKS
	NUMBER	POUNDS	NUMBER	POUNDS	NUMBER	POUNDS	FISH / POUND	LOCATION	MILE	
April 2, 2003			100,000	367.6			272	NPT		None
Apriul 22, 2003			201,120	1,699			118	Capt. John's Rapids AP - NPT		CWT 61-01/21
May 6, 2003			199,964	1,483			135	Pittsburg Landing AP-NPT		CWT 61-01/23
May 7, 2003			200,026	1,894			106	Big Canyon AP - NPT		CWT 61-01/22
May 12, 2003			313,600	3,200			98	Big Canyon AP - NPT		None
May 13, 2003			232,344	2,766			84	Capt. John's Rapids AP - NPT		None
May 14, 2003			79,800	950			84	Capt. John's Rapids AP - NPT		None
May 19, 2003			201,600	1,400			144	Pittsburg Landing AP-NPT		None
May 22, 2003			131,334	1,058			125	Cherry Lane NPT		None
June 2, 2003			69,387	1,542			45	Lower Granite Dam		None
June 5, 2003			133,780	1,743			77	Capt. John's Rapids AP - NPT		None
June 6, 2003			138,912	1,521			91	Capt. John's Rapids AP - NPT		None
June 6, 2003					200,092	4,002	50	On-Site Release	59.1	AD/CWT 63-15/45
June 9, 2003					100,019	2,500	40	Couse Creek boat launch	157.6	AD/CWT 63-13/91
June 10, 2003			19,000	188			101	Capt. John's Rapids AP - NPT		None
			2,020,867	19,812	300,111	6,502				

Table 19. Brood Year 2001 Tucannon spring chinook - Mixed - plants and transfers.

PLANTS AND TRANSFERS LYONS FERRY HATCHERY

DATE	TRANSFERRED IN		TRANSFERRED OUT		PLANTED		SIZE	WATER	RIVER	MARKS
	NUMBER	POUNDS	NUMBER	POUNDS	NUMBER	POUNDS	FISH / POUND	LOCATION	MILE	
Oct. 10, 2002			148,759	4,502.8			31.3	Tucannon Hatchery	36	AD/VI Right Red /CWT 63-06/81
Feb. 24, 2003			1,449	97			15	Tucannon Hatchery	41	AD/VI Right Red /CWT 63-06/81
			150,208	4,599	0	0				

Table 20. Brood Year 2001 Tucannon spring chinook - Captive Brood - plants and transfers.

PLANTS AND TRANSFERS

LYONS FERRY HATCHERY

DATE	TRANSFERRED IN		TRANSFERRED OUT		PLANTED		SIZE	WATER	RIVER	MARKS
	NUMBER	POUNDS	NUMBER	POUNDS	NUMBER	POUNDS	FISH / POUND	LOCATION	MILE	
Oct. 10, 2002			144412	4,222.6			34.2	Tucannon Hatchery	36	Agency CWT
			144,412	4,223	0	0				

Table 21. Brood Year 2002 Lyons Ferry summer steelhead - Hatchery - plants and transfers.

PLANTS AND TRANSFERS — LYONS FERRY HATCHERY

DATE	TRANSFERRED IN		TRANSFERRED OUT		PLANTED		SIZE	WATER	RIVER	MARKS
	NUMBER	POUNDS	NUMBER	POUNDS	NUMBER	POUNDS	FISH / POUND	LOCATION	MILE	
Feb. 2003	20,836	3,416					6.1	Dayton AP		AD/LV/CWT 63-15/80
Feb. 2003	79,624	13,053					6.1	Dayton AP		AD Only
April 15-30, 2003					20,817	4,429	4.7	From Dayton AP	54	AD/LV/CWT 63-15/80
April 15-30, 2003					79,628	16,942	4.7	From Dayton AP	54	AD Only
April 16, 2003					21,384	4,649	4.6	On-Site Release	59.1	AD/LV/FB LA-2-2/CWT 63-15/16
April 15-16, 2003					38,617	8,201	4.7	On-Site Release	59.1	AD Only
April 15, 2003					21,165	4,810	4.4	Walla-Walla	35	AD/LV/CWT 63-15/81
April 15-17, 2003					81,810	17,300	4.7	Walla-Walla	35	Ad Only
April 15, 2003					21,004	5,001	4.2	Tucannon River	17.4	AD/LV/FB RA-2-2/CWT 63-15/79
April 15-18, 2003					94,492	19,886	4.75	Tucannon River	17.4	AD Only
	100,460	16,469	0	0	378,917	81,218				

Table 22. Brood Year 2003 Lyons Ferry summer steelhead - Hatchery - plants and transfers.

PLANTS AND TRANSFERS LYONS FERRY HATCHERY

DATE	TRANSFERRED IN		TRANSFERRED OUT		PLANTED		SIZE	WATER	RIVER	MARKS
	NUMBER	POUNDS	NUMBER	POUNDS	NUMBER	POUNDS	FISH / POUND	LOCATION	MILE	
Sept. 16, 2003					6,741	221	30.5	Blue Lake		None
Sept. 16, 2003					6,741	221	30.5	Spring Lake		None
					13,482	442				

Table 23. Brood Year 2002 Wallowa summer steelhead - Hatchery - plants and transfers.

PLANTS AND TRANSFERS

LYONS FERRY HATCHERY - Cottonwood Acclimation Pond

DATE	TRANSFERRED IN		TRANSFERRED OUT		PLANTED		SIZE	WATER	RIVER	MARKS
	NUMBER	POUNDS	NUMBER	POUNDS	NUMBER	POUNDS	FISH / POUND	LOCATION	MILE	
Feb. 2003	42,168	5,776					7.3	Cottonwood AP		AD/LV/FB LA-IC-1/CWT 63-15/23
Feb. 2003	199,827	27,374					7.3	Cottonwood AP		AD ONLY
April 1-30 2003					41,255	7,778	5.3	Grande Rhonde	28.7	AD/LV/FB LA-IC-1/CWT 63-15/23
April 1-30 2003					195,372	36,853	5.3	Grande Rhonde	28.7	AD ONLY
	241,995	33,150			236,627	44,631				

Table 24. Brood Year 2003 Wallowa summer steelhead - Hatchery - plants and transfers.

PLANTS AND TRANSFERS

LYONS FERRY HATCHERY

DATE	TRANSFERRED IN		TRANSFERRED OUT		PLANTED		SIZE	WATER	RIVER	MARKS
	NUMBER	POUNDS	NUMBER	POUNDS	NUMBER	POUNDS	FISH / POUND	LOCATION	MILE	
June 16, 2003					39,928	54	739	Sprague Lake		None
Sept. 17, 2003					17,045	185	92.3	Sprague Lake		None
	0	0			56,973	239				

Table 25. Brood Year 2002 Tucannon summer steelhead - Wild - plants and transfers.

PLANTS AND TRANSFERS

LYONS FERRY HATCHERY

DATE	TRANSFERRED IN		TRANSFERRED OUT		PLANTED		SIZE	WATER	RIVER	MARKS
	NUMBER	POUNDS	NUMBER	POUNDS	NUMBER	POUNDS	FISH / POUND	LOCATION	MILE	
March 5, 2003			43,871	7,092		0	6.2	Tucannon Hatchery	41	VI Right Green/CWT 63-14/82
			43,871	7,092	0	0				

Table 26. Brood Year 2002 Touchet summer steelhead - Wild - plants and transfers.

PLANTS AND TRANSFERS

LYONS FERRY HATCHERY

DATE	TRANSFERRED IN		TRANSFERRED OUT		PLANTED		SIZE	WATER	RIVER	MARKS
	NUMBER	POUNDS	NUMBER	POUNDS	NUMBER	POUNDS	FISH / POUND	LOCATION	MILE	
April 21, 2003					31,440	8,416	4.9	Touchet River	57.2	VI Left Green/CWT 63-15/30
					31,440	8,416				

Table 27. Brood Year 2001 Spokane rainbow trout plants and transfers.

PLANTS

LYONS FERRY HATCHERY

DATE	TRANSFERRED IN		TRANSFERRED OUT		PLANTED		SIZE	WATER	RIVER	MARKS
	NUMBER	POUNDS	NUMBER	POUNDS	NUMBER	POUNDS	FISH / POUND	LOCATION	MILE	
Feb. 18, 2003					5,010	1,670	2.70	Quarry Pond		
Feb. 18, 2003					5,010	1,670	2.70	Dalton pond		
Feb. 18, 2003					4,500	1,500	2.70	West Evans		
Feb. 18, 2003					4,500	1,500	2.80	Golf Course		
Feb. 19, 2003					3,060	900	2.80	Rainbow Lake		
Feb. 19, 2003					2,550	750	2.80	Watson Lake		
Feb. 20, 2003					3,978	1,170	2.80	Blue Lake		
Feb. 20, 2003					2,006	590	2.60	Spring Lake		
Feb. 21, 2003					1,002	334	2.60	Orchard Pond		
Feb. 21, 2003					1,002	334	3.00	Marmes Pond		
Feb. 24, 2003					1,002	334	2.60	Deer Lake		
Feb. 24, 2003					502	173	2.60	Beaver Pond		
Feb. 24, 2003					1,004	346	3.00	Watson Lake		
Feb. 25, 2003					2,010	693	2.60	Riparia Pond		
Feb. 26, 2003					1,001	345		Dam Pond		
Feb. 26, 2003					2,000	645		Big Four Lake		
Feb. 26, 2003					3,001	968	3.00	Pampa Pond		
Feb. 27, 2003					2,502	782	2.60	Bennington Lake		
Feb. 28, 2003					2,502	782	2.70	Sprague Lake		
March 3, 2003					1,502	518		Dayton JV Pond		
March 10, 2003					3,043	1,125	2.70	Fish Hook Park		
Subtotal					52,687	17,129	3.08			

Table 27. Continued - Brood Year 2001 Spokane rainbow trout plants and transfers.

PLANTS LYONS FERRY HATCHERY

DATE	TRANSFERRED IN		TRANSFERRED OUT		PLANTED		SIZE	WATER	RIVER	MARKS
	NUMBER	POUNDS	NUMBER	POUNDS	NUMBER	POUNDS	FISH / POUND	LOCATION	MILE	
Page 1 Total					52,687	17,129				
March 10, 2003					3,380	1,252	2.70	Bennington Lake		
March 11, 2003					5,625	1,950	2.70	Quarry Pond		
March 12, 2003					4,860	1,800	2.70	Dalton pond		
March 12, 2003					2,016	720	2.80	Spring Lake		
March 13, 2003					4,060	1,450	2.80	Rainbow Lake		
March 13, 2003					2,016	720	2.80	Blue Lake		
March 13, 2003					2,016	720	2.80	Blue Lake		
March 17, 2003					4,550	1,750	2.60	West Evans		
March 17, 2003					2,002	770	2.60	Silcott Pond		
March 17, 2003					1,002	334	3.00	Dam Pond		
March 17, 2003					4,160	1,600	2.60	Bennington Lake		
March 18, 2003					3,562	1,370	2.60	Watson Lake		
March 18, 2003					1,002	334	3.00	Orchard Pond		
March 18, 2003					3,037	1,168	2.60	Golf Course		
March 18, 2003					570	190	3.00	Marmes Pond		
March 18, 2003					432	166	2.60	Marmes Pond		
March 19, 2003					2,754	1,020	2.70	Quarry Pond		
March 19, 2003					1,499	555	2.70	Golf Course		
Page Totals					48,543	17,869				
Subtotal					101,230	34,998	2.89			

Table 27. Continued - Brood Year 2001 Spokane rainbow trout plants and transfers.

PLANTS

LYONS FERRY HATCHERY

DATE	TRANSFERRED IN		TRANSFERRED OUT		PLANTED		SIZE	WATER	RIVER	MARKS
	NUMBER	POUNDS	NUMBER	POUNDS	NUMBER	POUNDS	FISH / POUND	LOCATION	MILE	
Page 1 and 2 Totals					101,230	34,998				
March 19, 2003					3,154	1,168	2.70	Dalton Pond		
March 19, 2003					2,028	751	2.60	Lyons Park Pond		
March 24, 2003					3,042	1,170	2.60	Dalton Pond		
March 24, 2003					1,300	500	2.60	Blue Lake		
March 24, 2003					1,560	600	2.60	West Evans		
March 24, 2003					2,340	900	2.60	Golf Course		
March 26, 2003					434	167	2.60	Dayton JV Pond		
March 26, 2003					1,001	385	2.60	Blue Lake		
Page Totals					14,859	5,641				
Total					116,089	40,639	2.86			

Table 28. Brood Year 2002 Spokane rainbow trout plants and transfers.

PLANTS AND TRANSFERS LYONS FERRY HATCHERY

DATE	TRANSFERRED IN		TRANSFERRED OUT		PLANTED		SIZE	WATER	RIVER	MARKS
	NUMBER	POUNDS	NUMBER	POUNDS	NUMBER	POUNDS	FISH / POUND	LOCATION	MILE	
May 6, 2003			60,000	800		0	75	IDF&G		
May 14, 2003			99,258	1,398			71	IDF&G		
July 2, 2003	935	38					24.5	Lyons Ferry Hatchery	59.1	
	935	38	159,258	2,198	0	0				

Table 29. Brood Year 2001 Kamloop rainbow trout plants and transfers.

PLANTS AND TRANSFERS

LYONS FERRY HATCHERY

DATE	TRANSFERRED IN		TRANSFERRED OUT		PLANTED		SIZE	WATER	RIVER	MARKS
	NUMBER	POUNDS	NUMBER	POUNDS	NUMBER	POUNDS	FISH / POUND	LOCATION	MILE	
Oct. 3, 2002			41,682	940.9			44.3	IDF&G		AD/RV Clip
	0	0	41,682	941			43.3			

Table 30. Brood Year 2002 Kamloop rainbow trout plants and transfers.

PLANTS AND TRANSFERS

LYONS FERRY HATCHERY

DATE	TRANSFERRED IN		TRANSFERRED OUT		PLANTED		SIZE	WATER	RIVER	MARKS
	NUMBER	POUNDS	NUMBER	POUNDS	NUMBER	POUNDS	FISH / POUND	LOCATION	MILE	
July 24, 2003	23,858	302					79	Lyons Ferry Hatchery	59.1	
July 28, 2003	24,220	346					70	Lyons Ferry Hatchery	59.1	
	48,078	648	0	0						

Table 31. Plants and transfers summary for the period Oct 1, 2002- Sep 30, 2003.

PLANTS AND TRANSFERS SUMMARY — LYONS FERRY HATCHERY — Oct 1, 2002 - Sep 30, 2003

STOCK CODE	TRANSFERRED IN		TRANSFERRED OUT		PLANTED		AVERAGE SIZE
	NUMBER	POUNDS	NUMBER	POUNDS	NUMBER	POUNDS	FISH / POUND
CK:SP:TUCA:01:M			150,208	4,559			23.15
CK:SP:TUCA:01:CB			144,412	4,223			34.20
CK:FA:SNAK:01:H			446,112	35,898			12.47
CK:FA:SNAK:01:H					572,068	55,159	20.10
CK:FA:SNAK:02:H			2,020,867	19,812			115.19
CK:FA:SNAK:02:H					300,111	6,502	45.00
SH:SU:TUCA:02:W			43,871	7,092			6.20
SH:SU:TOUC:02:W					31,440	8,416	4.90
SH:SU:LYON:02:H					378,917	81,218	4.59
SH:SU:LYON:03:H					13,482	442	30.50
SH:SU:WARI:02:H					236,627	44,641	5.30
SH:SU:WARI:03:H					56,973	239	415.65
RB:NA:SPOK:01:H					116,099	40,639	2.86
RB:NA:SPOK:02:H	935	38					24.50
RB:NA:SPOK:02:H			159,258	2,189			73.00
RB:NA:KAML:01:H			41,682	941			43.30
RB:NA:KAML:02:H	48,078	648					74.50
	49,013	686	3,006,410	74,714	1,705,707	237,256	

Table 32. Brood Year 2002 Snake River fall chinook adult collection and spawning.

ADULT COLLECTION AND SPAWNING — LYONS FERRY HATCHERY

Adult Collection Site: Lyons Ferry Hatchery Trap

MONTH ENDING	EST. TRAPPED / RECEIVED		Returned to River			Shipped/Planted			MORTALITY			SPAWNED				DISPOSAL			REMARKS
	ADULTS	JACKS	Male	Female	Jx	Male	Female	Jx	Male	Female	Jx	Male	Female	NVF	Jx	Male	Female	Jx	
Sep-02	1,138								7	4	1								FBY 2002
Oct-02	903		137	103	12				19	31	9	179	180		2	30	27	30	FBY 2003
Nov-02	339		195	42	12				211	37	72	464	428	4	13	216	79	222	
Adjustments	386																		
SEASON TOTAL	2,766	0	332	145	24	0	0	0	237	72	82	643	608	4	15	246	106	252	

Table 33. Brood Year 2003 Snake River fall chinook adult collection and spawning.

ADULT COLLECTION AND SPAWNING — LYONS FERRY HATCHERY

Adult Collection Site: Lyons Ferry Hatchery Trap

MONTH ENDING	EST. TRAPPED / RECEIVED		Returned to River			Shipped/Planted			MORTALITY			SPAWNED				DISPOSAL			REMARKS
	ADULTS	JACKS	Male	Female	Jx	Male	Female	Jx	Male	Female	Jx	Male	Female	NVF	Jx	Male	Female	Jx	
																			FBY 2003
Sep-03	487	158							11	10									
Oct-03	1,478	959	108	40	34				22	26	6	63	63		3	13	24	679	
Nov-03	601	72	160	1	23				526	64	118	594	594	5	43	137	153	124	FBY 2004
Dec-03	1		73	1	5	119	15	5	59	5	9	18	4			50	6	7	
Recaptures	-134	-5	-119	-15	-5														
Adjustments	397	-133																	
Season Total	2,830	1,051	222	27	57	119	15	5	618	105	133	675	661	5	46	200	183	810	

Table 34. Brood Year 2002 Snake River fall chinook adult collection and spawning.

ADULT COLLECTION AND SPAWNING **LYONS FERRY HATCHERY**

Adult Collection Site: Lower Granite Dam

MONTH ENDING	EST. TRAPPED / RECEIVED								MORTALITY			SPAWNED				DISPOSAL			REMARKS
	ADULTS	JACKS	Returned to River			Shipped/Planted			Male	Female	Jx	Male	Female	NVF	Jx	Male	Female	Jx	
			Male	Female	Jx	Male	Female	Jx											
Aug-02	50																		
Sep-02	2,061	171							2	1	2					7	9		FBY 2002
Oct-02	302	134	20	97	3				18	58	36	132	147	3	24	51	32	62	FBY 2003
Nov-02	58	12	237	125	9				57	40	42	410	567	6	36	245	203	70	
Adjustments	-4	-33																	
SEASON TOTAL	2,467	284	257	222	12	0	0	0	77	99	80	542	714	9	60	303	244	132	

Table 35. Brood Year 2003 Snake River fall chinook adult collection and spawning.

ADULT COLLECTION AND SPAWNING **LYONS FERRY HATCHERY**

Adult Collection Site: Lower Granite Dam

MONTH ENDING	EST. TRAPPED / RECEIVED								MORTALITY			SPAWNED				DISPOSAL			REMARKS
	ADULTS	JACKS	Returned to River			Shipped/Planted			Male	Female	Jx	Male	Female	NVF	Jx	Male	Female	Jx	
			Male	Female	Jx	Male	Female	Jx											
																			FBY 2003
Sep-03	246	71																	
Oct-03	209	168							5	2	22	5	9		3	7	8	105	FBY 2004
Nov-03	41	41							18	7	44	115	129		16	46	52	54	
Dec-03									13		6	2	3			66		15	
Adjustments	-9	-15																	
SEASON TOTAL	487	265	0	0	0	0	0	0	36	9	72	122	141	0	19	119	60	174	

Table 36. Brood Year 2003 Tucannon River spring chinook - Hatchery - collection and spawning.

ADULT COLLECTION AND SPAWNING — LYONS FERRY HATCHERY

Adult Collection Site: Rainbow Lake Trap

MONTH ENDING	EST. TRAPPED / RECEIVED								MORTALITY			SPAWNED				DISPOSAL			REMARKS
	ADULTS	JACKS	Returned to River			Shipped/Planted			Male	Female	Jx	Male	Female	NVF	Jx	Male	Female	Jx	
			Male	Female	Jx	Male	Female	Jx											
May-03	11																		
Jun-03	14	5																	
Jul-03	2										1								
Aug-03	0											2	2						
Sep-03	3											8	18		4				
Adjustments																			
SEASON TOTAL	30	5	0	0	0	0	0	0	0	0	1	10	20	0	4	0	0	0	

Note: Hatchery males are used only once.

Table 37. Brood Year 2003 Tucannon River spring chinook - Wild - collection and spawning.

ADULT COLLECTION AND SPAWNING — LYONS FERRY HATCHERY

Adult Collection Site: Rainbow Lake Trap

MONTH ENDING	EST. TRAPPED / RECEIVED								MORTALITY			SPAWNED				DISPOSAL			REMARKS
	ADULTS	JACKS	Returned to River			Shipped/Planted			Male	Female	Jx	Male	Female	NVF	Jx	Male	Female	Jx	
			Male	Female	Jx	Male	Female	Jx											
May-03	6																		
Jun-03	11																		
Jul-03	6																		
Aug-03	2									1			2						
Sep-03	16								2			22	15						
Adjustments																			
SEASON TOTAL	41	0	0	0	0	0	0	0	2	1	0	22	17	0	0	0	0	0	

Note: Fish identified at trapping are pit tagged and scales are taken for analysis to determine if they are truly wild fish. Wild males are spawned with hatchery females. Wild females are spawned with hatchery males. Wild males may be used for spawning up to three times. They may also be used for spawning with captive brood females.

Table 38. Brood Year 2003 Tucannon River spring chinook - Captive Brood - collection and spawning

ADULT COLLECTION AND SPAWNING

LYONS FERRY HATCHERY

Adult Collection Site: LFH Captive Brood Ponds

MONTH ENDING	EST. TRAPPED / RECEIVED			Returned to River			MORTALITY			SPAWNED				DISPOSAL			REMARKS
	ADULTS	Jacks		Male	Female	Jx	Male	Female	Jx	Male	Female	NVF	Jx	Male	Female	Jx	
Aug-03	354						1	1									
Sep-03	0							1		48	125	2					FBY 2002
Oct-03	0									74	98	2		2			FBY 2003
SEASON TOTAL	354	0					1	2	0	122	223	4	0	2	0	0	

Table 39. Brood Year 2003 Wallowa summer steelhead - Hatchery - collection and spawning.

ADULT COLLECTION AND SPAWNING — LYONS FERRY HATCHERY

Adult Collection Site: Cottonwood Creek Trap

MONTH ENDING	EST. TRAPPED / RECEIVED		Returned to Stream						MORTALITY			SPAWNED				CARCASS DISTRIBUTION			REMARKS
									Trap			Lethal	Lethal	Lethal	Live				
	ADULTS	JACKS	Above Rack			Below Rack			Male	Female	Unsexed	Male	Female	NVF	Male	Male	Female	Jx	
			Male	Female	Jx	Male	Female	Jx											
Mar-03	210			1						6		20	20				23		
Apr-03	270		82	159					3	8		45	45			8	60		
Adjustment																			
SEASON TOTAL	480		82	160	0	0	0	0	3	14		65	65	0	0	8	83	0	

Table 40. Brood Year 2003 Lyons Ferry summer steelhead - Hatchery - collection and spawning.

ADULT COLLECTION AND SPAWNING — LYONS FERRY HATCHERY

Adult Collection Site: LFH Trap

MONTH ENDING	EST. TRAPPED / RECEIVED								MORTALITY			SPAWNED				DISPOSAL			REMARKS
									Holding Pond			Lethal	Lethal	Lethal	Live				
	ADULTS	JACKS	RETURNED TO RIVER			DONATION			Male	Female	Unsexed	Male	Female	NVF	Male	Male	Female	Jx	
			Male	Female	Jx	Male	Female	Jx											
Sep-02	1,270									5									
Oct-02	963								5	10									
Nov-02	374		515	810					17	74									
Dec-02									22	92						1	15		
Jan-03									8	6		217	108				3		
Feb-03									12	6		40	18			66	36		
Adjustment																			
SEASON TOTAL	2,607	0	515	810	0	0	0	0	64	193	0	257	126	0	0	67	54	0	

Table 41. Brood Year 2003 Touchet River summer steelhead - Wild - collection and spawning.

ADULT COLLECTION AND SPAWNING — LYONS FERRY HATCHERY

Adult Collection Site: Dayton Trap

MONTH ENDING	EST. TRAPPED / RECEIVED		RETURNED TO RIVER						MORTALITY			SPAWNED				DISPOSAL			REMARKS
									Hatchery		Trap	Live	Lethal						
	ADULTS	JACKS	Above Rack			Trucked above Dayton from LFH			Male	Female	M / F	Male	Female	NVF	Jx	Male	Female	Jx	
			Male	Female	Jx	Male	Female	Jx											
Feb-03	29		4	12															
Mar-03	54			32							0/1	11	12	1					
Apr-03	36		8	28					1			4	4						
May-03	1			1															
Adjustment																			
SEASON TOTAL	120		12	73	0	0	0	0	1	0	0/1	15	16	1	0	0	0	0	

a. All males were live spawned throughout the season and killed in the end. Three males were live spawned and then returned to the river. One female was returned to the river, it was green on the last day of spawning.

Table 42. Brood Year 2003 Tucannon River summer steelhead - Wild - collection and spawning.

ADULT COLLECTION AND SPAWNING — LYONS FERRY HATCHERY

Adult Collection Site: Ducharme Trap

MONTH ENDING	EST. TRAPPED / RECEIVED		RETURNED TO RIVER						MORTALITY			SPAWNED				DISPOSAL			REMARKS
									Hatchery		Trap	Live	Lethal						
	ADULTS	JACKS	Above Rack			Trucked above Dayton from LFH			Male	Female	Unsexed	Male	Female	NVF	Jx	Male	Female	Jx	
			Male	Female	Jx	Male	Female	Jx											
Sep-02	3		1	2															
Oct-02	11		5	6															
Nov-02	9			1															
Dec-02	10		2	3															
Jan-03	17			7															
Feb-03	10			6									4	1					
Mar-03	26		2	16									8	1					
Apr-03									1			18	2						
SEASON TOTAL	86	0	10	41	0	0	0	0	1	0	0	18	14	2	0	0	0	0	

a. All males were live spawned throughout the season and killed on the last day.

Table 43. Brood Year 2004 Lyons Ferry summer steelhead - Hatchery - collection and spawning.

ADULT COLLECTION AND SPAWNING

LYONS FERRY HATCHERY

Adult Collection Site: LFH Trap

MONTH ENDING	EST. TRAPPED / RECEIVED									MORTALITY			SPAWNED				DISPOSAL			REMARKS
	ADULTS	JACKS	Returned to River			Shipped/Planted							Live	Lethal						
			MALE	FEMALE	JACK	MALE	FEMALE	JACK		Male	Female	Jx	Male	Female	NVF	Jx	Male	Female	Jx	
Sep-03	818									4	14									FBY 2003
Oct-03	1,013									4	15									FBY 2004
Nov-03	278		650	816						18	55									
Adjustment																				
SEASON TO DATE	2,109	0	650	816	0	0	0	0		26	84	0	0	0	0	0	0	0	0	

Table 44. Eggs received from other facilities during the period Oct 1, 2001 - Sep 20, 2002

EGGS RECEIVED

LYONS FERRY HATCHERY

DATE	RECEIVED FROM	SHIPPED TO	STOCK CODE	EGGS STAGE	EGG NUMBER
Nov. 12, 2002		USFWS	CK:FA:SNAK:02:H	Green	7,000
Nov. 12, 2002		NPT	CK:FA:SNAK:02:H	Green	616,000
Nov. 18, 2002		Battele Lab	CK:FA:SNAK:02:H	Eyed	2,100
Nov. 19, 2002		Battele Lab	CK:FA:SNAK:02:H	Eyed	3,000
Dec. 9, 2002		Umatilla Hatchery	CK:FA:SNAK:02:H	Eyed	336,967
Dec. 12, 2002	Spokane Hatchery		RB:NA:SPOK:02:H	Eyed	180,166
Dec. 13, 2002		Oxbow Hatchery	CK:FA:SNAK:02:H	Eyed	230,000
Jan. 13, 2003	Spokane Hatchery		RB:NA:SPOK:02:H	Eyed	132,328
Jan. 15, 2003		Salmon in the Classroom co-ops	RB:NA:SPOK:02:H	Eyed	6,750

Table 45. Egg take and disposition summary for the period Oct 1, 2002 - Sep 30, 2003.

EGG TAKE AND DISPOSITION — LYONS FERRY HATCHERY

SPAWNING PERIOD	STOCK CODE	FEMALES SPAWNED	EST. EGGS TAKEN	EGGS LOST	PERCENT LOSS	EGGS EYED	EGGS SHIPPED GREEN	EGGS SHIPPED EYED	EGGS DESTROYED	ADJUSTED TAKE + / -	TOTAL TAKE	FEMALES SPAWNED	FECUNDITY
Aug.-Sept. 2002	CK:SP:TUCA:02:M	49	169,364	6,047	3.6%	163,317					169,364	49	3,456
Aug.-Oct. 2002	CK:SP:TUCA:02:CB	121	176,544	120,833	68.4%	55,711					176,544	121	1,459
Oct.-Nov. 2002	CK:FA:SNAK:02:H	1,322	4,627,000	130,500	3.1%	4,156,967	a. 623000	572,067	b. 44900	283,467	4,910,467	1,322	3,714
Aug.-Sept. 2003	CK:SP:TUCA:03:M	37	111,000	7,451	5.3%	133,207				26,658	140,658	37	3,801
Sept.-Oct. 2003	CK:SP:TUCA:03:CB	223	337,000	122,673	39.7%	186,743				-27,584	309,416	223	1,387
Feb.-Apr. 2003	SH:SU:TUCA:03:W	14	70,000	8,166	13.6%	52,035				-9,799	60,201	14	4,300
Mar.-Apr 2003	SH:SU:TOUC:03:W	16	80,000	7,543	8.2%	84,640				12,183	92,183	16	5,761
Jan.-Feb. 2003	SH:SU:LYON:03:H	126	630,000	76,131	13.1%	477,855			c. 26565	-49,649	580,351	126	4,606
Mar.-Apr 2003	SH:SU:WARI:03:H	65	325,000	11,861	3.6%	242,557			c. 73059	2,477	327,477	65	5,038

a. Green eggs estimated at 3500/female at time of transfer.

b. Destroyed eggs were high ELISA.

c. Eggs from IHNV Positive Females - Destroyed prior to eyed egg stage.

Table 46. Diseases and treatments - Juveniles.

DISEASES AND TREATMENTS

LYONS FERRY HATCHERY

Oct. 1, 2002 - Sep. 30, 2003

Date Exam	Stock Brood Year	Disease	Chemical Dosage	Treatment Method / Time	H2O Temp.	Remarks
10/07/02	2001 Fall Chinook	BKD	Aqua/100 4.5g/100lbs fish	Fed for 28 days	52 F	Prophylactic following marking and splitting
01/07/03	2001 Fall Chinook	BKD	None	None	52 F	Monitor Mortality
01/15/03	2002 Spring Chinook	BKD	Aqua/100 4.5g/100lbs fish	Fed for 28 days	52 F	Prophylactic
2/25203	2002 Fall Chinook	Dropout Syndrome	None	None	52 F	Switch feed to Biodiet
02/25/03	2002 Fall Chinook	BKD	Aqua/100 4.5g/100 lbs Fish	Fed for 28 days	52 F	Prophylactic
04/08/03	2002 Rainbow Spokane	BCWD	15 mg / kg / day Florifinicol	Coated fish pills 10 days	52 F	
04/16/03	2002 Fall Chinook	BGD	0.5 ppm, 1.0 ppm, 1.5 ppm	KMNO4 3 Days	52 F	
04/22/03	2003 LFH Summer Steelhead	Dropout Syndrome	None	None	52 F	Move to tanks ASAP
04/22/03	2002 Fall Chinook	BGD	0.5 ppm, 1.0 ppm, 1.5 ppm	KMNO4 3 Days	52 F	Do not feed on treatment days
05/15/03	2002 Rainbow Spokane	BCWD	15 mg / kg / day Florifinicol	Coated fish pills 10 days	52 F	
06/23/03	2002 Rainbow Spokane	BCWD Cannibalism	None	None	52 F	Split raceways N-7 & N-8 into N-9 & N-10
08/18/03	2003 Wallawa Summer Steelhead	BCWD	None	None	52 F	Monitor Mortality call if exceed 80/day

Table 47. Diseases and treatments - Adults.

DISEASES AND TREATMENTS

LYONS FERRY HATCHERY

Oct. 1, 2002 - Sep. 30, 2003

Date Exam	Stock Brood Year	Pond Number	Disease	Chemical Dosage	Treatment Method / Time	Sex	Remarks
Upon arrival and transfer from TUC	2003 Tucannon Spring Chinook	Tucannon Adult Trap Transfer to LFH	Furunculosis BKD	0.5cc/10 lbs BW 0.5cc/10 lbs BW	Inject Oxytetracycline Inject Gallimycin	Males & Females	Trapped at Tucannon Hat. Prophylactic Treatment
7/29/03	2003 Tucannon Spring Chinook - CB	Upon Transfer from CB Ponds to Maturation Pond	BKD	0.5cc/10 lbs BW	Inject Gallimycin	Females Only	Captive Brood Spawners Prophylactic Treatment
8/26/03	2003 Tucannon Spring Chinook	LFH Holding Pond	BKD	0.5cc/10 lbs BW	Inject Gallimycin	Females Only	Trapped at Tucannon Hat. Prophylactic Treatment
Upon Transfer from LGD	2003 Snake R. Fall Chinook	Injected and Trucked to LFH from LGD	Frunculosis BKD	0.5 cc/10 BW 0.5cc/10 lbs BW	Inject Oxytetracycline Inject Gallimycin	Males & Females	From Lower Granet Dam Prophylactic Treatment
10/1/03	2003 Snake R. Fall Chinook	LFH Holding Pond	Frunculosis BKD	0.5 cc/10 BW 0.5cc/10 lbs BW	Inject Gallimycin	Females Only	Arrivals to date LF Trap Prophylactic Treatment
10/21/03	2003 Snake R. Fall Chinook	LFH Holding Pond	BKD	0.5cc/10 lbs BW	Inject Gallimycin	Females Only	Prophylactic Treatment
After Weekly	2003 Snake R. Fall Chinook	LFH Holding Pond	BKD	0.5cc/10 lbs BW	Inject Gallimycin	Females Only	All new green Female arrivals at LF Trap Prophylactic Treatment

Table 48. Feed Fed during the period Oct 1, 2002 - Sep 30, 2003.

LYONS FERRY HATCHERY

Oct 1, 2002 through Sep 30, 2003

FEED TYPE / SIZE	CY 2002 Oct-02	Nov-02	Dec-02	CY 2003 Jan-03	Feb-03	Mar-03	Apr-03	May-03	Jun-03	Jul-03	Aug-03	Sep-03	Total
BioProducts													
BDS #3			176	262	1,767	875							3,080
BDG 1.0 mm					333	2,263	716						3,312
BDG 1.3 mm					49	2,853	6,382	176					9,460
BDG 1.5 mm							3,750	7,206	4,599	2,089			17,644
BMG 2.0 mm										428	523	550	1,501
BMF 2.5 mm	10,027	1,436	6,133	8,430	4,100	29	40	25		5		1,270	31,495
BROOD 8.0 mm									73			15	88
BDG 1.0 mm + Aqua @ 2.25%				95	209	708	110		154				1,276
BMF 2.5 mm + Aqua @ 4.5%		7,816	2,509										10,325
Fish Pills 1.0								178	147		66		391
Fish Pills 1.3											33	77	110
Totals	10,027	9,252	8,818	8,787	6,458	6,728	10,998	7,585	4,973	2,522	622	1,912	78,682
MooreClark													
Nutra #0							490	343	624	118			1,575
Clarks Nutra #1							84	539	539	568	488		2,218
Clarks Nutra #2							8	476	1,796	772	475	249	3,776
Clarks Nutra #3	1,847									1,012	1,201	781	4,841
Fry 1.5 mm												200	200
Fry 2.0 mm										2,597	5,954	6,609	15,160
Fry 2.5 mm	56	20	5,291	6,812	7,392	5,843	264		132		10	1,090	26,910
Fry 3.5 mm	81	480		1,212									1,773
Trout 4.0				143		145				39	93	41	461
Trout 6.0				81	145								226
Salmon Brood 6.0						528	151	214	207	11	47	57	1,215
Pedi Sal 6.5 mm	5	10											15
Salmon Brood 9.0						88	95	213		9	4		409
Fish Pills #2							134	42					176
Totals	1,989	510	5,291	8,248	7,537	6,604	1,226	1,827	3,298	5,126	8,272	9,027	58,955
Nelson & Sons Inc.													
SC Sal #3	3,244	2,971											6,215
SC Sal #4	6,005	3,530	717										10,252
Float 1.5												1,400	1,400
Float 2.5					110								110
Salmon 2.0											130		130
Ext Sal 3.0 mm	2,850	10,725	18,505	20,471	17,510	11,300	2,095						83,456
SC Trt 1/8"			1,030	4,130	3,060	2,628							10,848
SC Trt 3/32"	2,550	3,325	6,540										12,415
Totals	14,649	20,551	26,792	24,601	20,680	13,928	2,095	0	0	0	130	1,400	124,826
Rangens													
PIGMNT 3/16"			605	1,040	675	180							2,500
Totals	0	0	605	1,040	675	180	0	0	0	0	0	0	2,500
EWOS													
Micro #1				4	433	795	323						1,555
Micro #2						528	524	314			174		1,540
Micro 1.2							141	1,267	60	79	509	4,412	6,468
Pac 1.5 s/c									1,012		128	136	1,276
Pac 1.5									132	1,297	67	528	2,024
Pac 2.0											1,064		1,064
3 mm							2,051					515	2,566
Totals	0	0	0	4	433	1,323	3,039	1,581	1,204	1,376	1,942	5,591	16,493
Total	26,665	30,313	41,506	42,680	35,783	28,763	17,358	10,993	9,475	9,024	10,966	17,930	281,456

Section Three Tables

Fish Health

Table 49. Broodstock viral testing at Lyons Ferry Hatchery, 2002 - 2003.

Location	Date	Species-Stock	No. OF	No. KS	Results
Lyons Ferry	11-02	CHF-Snake River	60	60	IHNV
Lyons Ferry	01-03	SS-Lyons Ferry	126	60	IHNV
Lyons Ferry	03-03	SS-Tucannon River	16	16	Negative
Cottonwood Pond	04-03	SS-Grande Ronde	65	60	IHNV
Lyons Ferry	04-03	SS-Touchet River	14	14	Negative
Lyons Ferry	09-03	CHS-Tucannon River	35	35	IHNV
Lyons Ferry	09-03	CHS-Tucannon Captive	60	60	IHNV

OF = ovarian fluid
KS = kidney/spleen

Table 50. BKD-ELISA testing of female chinook broodstocks at Lyons Ferry Hatchery in 2002-2003.

Species-Stock	No. Tested	%Below Low	%Low	%Mod.	%High
CHF-Snake R.	668	83.5	10.0	3.0	3.4
CHS-Tucannon-Anadromous	36	83.3	11.1	2.8	2.8
CHS-Tucannon-Captive	224	100	0	0	0

Table 51. Summary of fish health inspections - Lyons Ferry and Tucannon hatcheries, October 1, 2002 to September 30, 2003.

Hatchery	Date	Species	Stock	Broodyear	Diagnosis
Lyons Ferry	07-Oct-02	CHF	Lyons Ferry	2001	Bacterial Kidney Disease
Lyons Ferry	07-Jan-03	CHF	Lyons Ferry	2001	Bacterial Kidney Disease
Lyons Ferry	21-Jan-03	SS	Touchet	2002	Healthy
Lyons Ferry	04-Feb-03	RB	Spokane	2002	Healthy
Lyons Ferry	25-Feb-03	CHF	Lyons Ferry	2002	Dropout Syndrome
Lyons Ferry	18-Mar-03	CHF	Lyons Ferry	2002	Healthy
Lyons Ferry	08-Apr-03	RB	Spokane	2002	Bacterial Coldwater Disease
Lyons Ferry	16-Apr-03	CHF	Lyons Ferry	2002	Bacterial Gill Disease
Lyons Ferry	22-Apr-03	CHF	Lyons Ferry	2002	Bacterial Gill Disease
Lyons Ferry	22-Apr-03	SS	Lyons Ferry	2003	Dropout Syndrome
Lyons Ferry	07-May-03	CHF	Lyons Ferry	2002	Bacterial Gill Disease
Lyons Ferry	15-May-03	SS	Lyons Ferry	2001	Bacterial Coldwater Disease
Lyons Ferry	15-May-03	RB	Spokane	2002	Bacterial Coldwater Disease
Lyons Ferry	15-May-03	CHF	Lyons Ferry	2002	Healthy
Lyons Ferry	27-May-03	SS	Lyons Ferry	2001	Bacterial Coldwater Disease
Lyons Ferry	10-Jun-03	CHF	Lyons Ferry	2002	Healthy
Lyons Ferry	23-Jun-03	RB	Spokane	2002	Bacterial Coldwater Disease
Lyons Ferry	21-Jul-03	SS	Lyons Ferry	2003	Healthy
Lyons Ferry	18-Aug-03	SS	Wallowa	2003	Bacterial Coldwater Disease
Lyons Ferry	16-Sep-03	CHF	Lyons Ferry	2002	Healthy
Tucannon	07-Oct-02	RB	Spokane	2001	Bacterial Gill Disease & Ext. Parasites
Tucannon	07-Oct-02	RB	Spokane	2001	Healthy
Tucannon	22-Oct-02	RB	Spokane	2001	Bacterial Gill Disease
Tucannon	13-Nov-02	RB	Spokane	2001	Bacterial Gill Disease
Tucannon	24-Dec-02	CHS	Tucannon	2001	Healthy
Tucannon	24-Dec-02	RB	Spokane	2001	Healthy
Tucannon	23-Jan-03	CHS	Tucannon	2001	Bacterial Kidney Disease
Tucannon	23-Jan-03	RB	Spokane	2001	Healthy
Tucannon	14-Mar-03	RB	Spokane	2001	Healthy
Tucannon	29-Apr-03	RB	Spokane	2002	Healthy
Tucannon	27-May-03	RB	Spokane	2002	Bacterial Coldware Disease & Steatitis
Tucannon	26-Jun-03	RB	Spokane	2002	Healthy
Tucannon	28-Aug-03	RB	Spokane	2002	Healthy
Tucannon	09-Sep-03	RB	Spokane	2002	Ichthyophthiriasis
Tucannon	16-Sep-03	RB	Spokane	2002	Ichthyophthiriasis